

a. In claim 1, lines 3-4, the Examiner stated that the phrase "an opening located parallel to a longitudinal axis extending from the open end to near the closed end" was not disclosed in the specification and drawings.

Applicant's respectfully traverse this rejection.

Fig. 16 shows a top detail partial view of the closed end of the outer shaft 50, page 6 lines 11 - 12. In this figure, the trough like opening 68 is shown and labeled and is also described on page 7 lines 16 - 18. Fig. 6 shows a cross section view along longitudinal axis A-A in Fig. 16, of the outer shaft 50, page 5 lines 25 - 26.

The longitudinal axis is labeled as 75 in both Figs. 17 and 18 and disclosed on page 8, line 22. The label for the trough like opening 68 was inadvertently omitted, but has been added to Figs. 6, 7 and 8 in this amendment. Likewise, the label for the longitudinal axis has been added to Fig. 16. As can be seen, opening 68 starts at the open end 52 and terminates near the closed end 54, Fig. 6.

Applicant's respectfully request reconsideration and allowance of claim 1.

b. In claim 1, the Examiner stated that "a consistent width " in lines 5-6 is vague and indefinite.

One of the benefits of this invention is that the actuator bar 176 is the same width 168 along the entire length. This constant width of the actuator bar 176 means that there are no inherent weaknesses in the actuator bar 176 as one would have where a compressive force is applied to a shaft that tapers. The applicant's have amended the claims to comply with the terminology as disclosed and described in the specification on page 9 lines 7 - 10 and drawings, by substituting the word "constant" for "consistent".

Applicant's respectfully request reconsideration and allowance of claim 1.

c. In claim 8, line 6, the Examiner stated that "a consistent width " is vague and indefinite.

In claim 8, line 6, applicant's have changed "consistent" to "constant" to comply with the terminology of the specification as discussed directly above.

Applicant's respectfully request reconsideration and allowance of claim 8.

d. In claims 7, 11, and 19, lines 3-4, the Examiner stated that "a center" is vague and indefinite.

Claims 7, 11 and 19 have been canceled and the rejection is moot.

e. In claims 6, 12, and 16, line 3, the Examiner stated that "a first surface" is vague and indefinite.

Applicant's respectfully traverse this rejection.

This device opens and closes due to the interaction of the actuator bar 176 single radial ridge 182 and the single curved slot 108 of the inner tip 100. When the actuation end 180 of the actuator bar 176 moves towards the outer shaft 50, Fig. 3, the larger width lower surface 186 of the actuator bar 176 engages the larger width second surface 112 of the inner tip 100. This makes sense since the most load upon the device should occur when the inner tip 100 is grabbing or cutting tissue and this increased width provides less stress on the components.

When the actuation end of the actuator bar 176 moves away from the outer shaft 50, Fig. 2, the smaller width upper surface 184 of the actuator bar engages the smaller width first surface 110 of the inner tip 100. As this movement generally requires less force on the components, a smaller contact surface is allowed.

Applicant's have made amendments to claims 6, 12, and 16 as the "lower surface" was misidentified and have changed this to the --second surface--. Applicant's have amended claims 6, 12 and 16 by replacing "area" with --width-- to comply with the disclosure.

The '375 patent, as best understood, discloses two arcuate flanges 612 and two arcuate grooves 614 having the same width, Fig. 4a and 5a.

Applicant's claims no longer read on the '375 patent and request reconsideration and allowance of claims 6, 12 and 16.

2. The Examiner rejected claims 1-21 under 35 USC 102(b) as being anticipated by Turkel, et al. U.S. Patent Number 5,395,375.

a. With regard to claims 1-3, 8, 13-15 and 20-21, the Examiner stated that Turkel et al. US patent 5395375 disclosed a tool for lacerating or grasping other objects comprising an outer shaft 15 having with an open end and a closed end, a consistent width actuator bar 60, a transition 65 near the tip end resulting in the tip end having a longitudinal offset axis displaced from the longitudinal axis in a single plane as seen in fig. 3a and 3b, an inner tip with a biting edge 616 rotationally engaged to the outer shaft, and a handgrip for translation means. Said inner tip interengages to a radial ridge 612 with a curved slot 614 located on an open side where translation of the actuator bare relative the outer shaft which results in rotation of the inner tip relative to the outer shaft. Said outer shaft has a trough like opening 620, as seen in fig. 5a, a shaft hole 60b and axle hole 610, and a die edge 606, as seen in fig. 5a.

(a) Applicant claims an actuator bar 176 with a constant width 168. The width 168 is constant from the actuation end 180 to the tip end 178.

Applicant' claims do not read on Turkel et al. US Pat No. 5395375 ('375 patent) as the '375 patent does not disclose a push rod 60 having a constant width as seen in Fig. 2b. In fact, the '375 patent specifically discloses "push rod 609 is further provided with a weakened frangible portion 60a which as shown in Fig. 2a and 2b, is a flattened plate like portion with a throughbore 60b...", column 3 lines 64 - 67. The '375 patent is designed to fail at this frangible portion 60a due to the decrease in the width of the push rod 60.

Applicant's actuator bar 176 is a "constant width 168 along the entire length of the actuator bar

176", page 9 lines 7 - 9.

(b) Applicant's transition 190 is not the equivalent element to the '375 patent distal end 65 nor terminal portion 122 as the Examiner has discussed. The '375 patent distal end 65 is a flattened plate like terminal portion 122 which is vertically offset from the axis of the push rod. The width of this terminal portion 122, as best understood, is not the same as the diameter of the push rod 60 as seen in Fig. 2a.

The '375 patent terminal portion 122 utilizes pin 610 to interengage the push rod 60 and the movable jaw 604.

Applicant's disclose and claim "a radial ridge located near the tip end for engagement with an inner tip". Applicant's actuator bar 176 has a radial ridge 182 with an upper surface 184 and a lower surface 186, best seen in Fig. 15, for engagement to the curved slot 108 in the inner tip 100 having a first surface 110 and second surface 112, Fig. 9.

The '375 patent connects the push rod 60 to the movable jaw 604 via pin 610 while applicant claims "the inner tip interengaging the radial ridge with a curved slot....".

Applicant's disclose and claim a single radial ridge 182 on the actuator bar 176 having an upper surface 184 and a wider lower surface 186 for engagement with a single curved slot 108 in the inner tip 100 having a first surface 110 and a wider second surface 112. The '375 patent shows a pair of arcuate flanges 612 in the stationary jaw 602, Fig. 5a, and a pair of arcuate grooves 614 in the movable jaw 604, as best understood, having the same width, Fig. 4a. The '375 patent has double the machining and associated expense with the inherently complicated tolerance problems as compared to Applicant's single slot 108 and ridge 182. In addition, the '375 patent has double the number of interfaces to clean after the instrument is used.

(c) The '375 patent discloses four separate primary components; the tube 15, the push rod 60, the moveable jaw 604 and the stationery jaw 602, Fig. 3b. Where the stationary jaw 602 has ribs 608a for engaging the interior of the tube 15.

Applicant's claim only three primary components; the outer shaft 50, the actuator bar 176 and the inner tip 100. Applicant's have simplified the number of components.

(d) Applicant's have amended claims 1, 8 and 15 to further limit the claim by adding the term "horizontally" to claim that the offset axis is displaced horizontally from the longitudinal axis.

The '375 patent has the axis offset down in the vertical direction.

SUMMARY:

In summary, Applicant's claim a constant width actuator bar 176, and the transition 190 is not an equivalent element to the '375 patent. Applicant's actuator bar 176 interengages with the inner tip 100 via a radial ridge 182 on the actuator bar 176 and a curved slot 108 in the inner tip 100 not a pin 610 as does the '375 patent.

Applicant's disclose and claim the radial ridge 182 having a wider lower surface 186 and a narrower upper surface 184. Applicant's also disclose and claim a curved slot 108 having a wider second surface 112 and narrower first surface 110.

Applicants claim a horizontally displaced offset axis.

Applicant's claim only three primary elements as compared to the '375 patent.

For the above reasons, Applicant's request reconsideration and allowance of claims 1 - 21 generally and specifically claims 1-3, 8, 13- 15 and 20 - 21.

b. With regard to claims 4, 10, and 18, the Examiner stated that the transition 65 occurs over a shift distance not exceeding two times the width of the actuator bar, as seen in Fig. 3a.

Claims 4, 10 and 18 have been canceled and the rejection is now moot.

c. With regard to claims 5, 9, and 17, the Examiner stated that the offset axis is displaced from the

longitudinal axis a distance of 20% - 75% of the width of the actuator bar, as seen in Fig. 2A.

Claims 5, 9 and 17 have been canceled and the rejection is now moot

d. With regard to claims 7, 11, and 19, the transition locations is within four times the width of the actuator bar , as seen in Fig. 2a.

Claims 7, 11 and 19 have been canceled and the rejection is now moot.

e. With regard to claims 6, 12, and 16, the radial ridge having an upper surface smaller in area than a lower surface and the curved slot having a first surface smaller in area than a lower surface as seen in Fig. 4b.

Applicant's have emended claims 6, 12 and 16 by replacing "area" with --width--. Fig. 13 has been amended to include a hidden line showing the wider lower surface 186. This is supported in the specification on page 7 lines 24 - 29. No new matter is added.

The '375 patent shows, as best understood, arcuate flanges 612 and arcuate grooves 614 having the same width, Figs 4a and 5a.

Applicant respectfully requests reconsideration and withdrawal of the rejections of claims 2, 3, 13, 14 and 20 which are being presented again without amendment. Reconsideration of this application is requested.

Applicant acknowledges the Notice of Patent Drawing Objection and respectfully requests permission to file corrected formal drawings once the application is allowed.

PATENT
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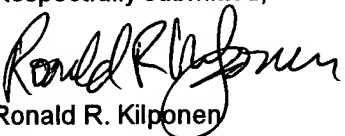
On the basis of the above, reconsideration and allowance is believed warranted. A fee for a one month extension of time is included. Examiner is encouraged to contact Applicant's attorney Ronald R. Kilponen at 248/344-7132 if there are any issues that need clarification in order for this application to issue.

In light of the foregoing amendment and comments, the present invention is believed to be in condition for allowance.

Favorable reconsideration and allowance thereof is respectfully requested.

Respectfully submitted,

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